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REMARKS

Claims 1 and 2 are canceled. New claim 19 has been added. Claims 3-10 and 13 have been amended. Claims 3-19 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

DRAWINGS

The drawings are objected to under 37 C.F.R. 1.83(a). In particular, the Action notes that the drawings should show every feature of the invention specified by the claims. In particular, the Action states that the system implemented in a scanner application, an optical mouse application, a video game controller application, a movement encoder application, a near field application and a far field application must be shown in the drawings or the features canceled from the claims. It is respectfully submitted that the general architecture, design, and operation of these above-noted applications are well-known to those of ordinary skill in the art and described in the prior art. However, the inventive mechanisms according to the invention and the use of these inventive mechanisms in these applications are novel and non-obvious. In this regard, details about these applications need not be illustrated in the drawings in the current application. Consequently, withdrawal of the objection to the drawings is respectfully requested.

OBJECTION TO CLAIMS 2, 4, 6, 7, 10, 11, 13

Claims 2, 4, 6, 7, 10, 11, 13 are objected to for the reasons set forth on pages 2 and 3 of the Action. Specifically, in claims 2 and 10 the phrase, "the value," lacks proper antecedent basis. In claim 4, the phrase "the voltage value," lacks proper antecedent basis. In claims 6 and 7, the phrase "the amplifier," lacks proper antecedent basis. In claim 11, the phrase "the single amplifier," lacks proper antecedent basis.

In response, claim 2 has been canceled, and claims 4, 6, 7, 10 and 13 have been amended to provide the proper antecedent basis. Accordingly, it is respectfully submitted that the amended claims recite the proper antecedent basis and fully comply with the patent rules.

REJECTION OF CLAIMS UNDER 35 U.S.C. 102

Claims 1-5, 8-14, 17 and 18 are rejected under 35 U.S.C. 102(e) for the reasons set forth on pages 3-5 of the Action. Specifically, claims 1-5, 8-14, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Krymski (US Pat. No. 6,222,175), which is hereinafter referred to as "Krymski" or as "the Krymski reference."

The rejections under 35 U.S.C. 102(e) are respectfully traversed, at least insofar as applied to the new and amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth herein below.

The Federal Circuit has ruled, "Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art. . . . In

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addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public.” Akzo N.V. v. United States Int’l Trade Comm’n, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987). [emphasis added.]

Furthermore, the Federal Circuit has held, “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” W.L. Gore & Assocs. v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). [emphasis added.]

Pages 2 and 3 of the Action identify those elements of the Krymski reference that describe or otherwise anticipate the elements as claimed. Specifically, the Office Action asserts that components 50 and 52 of FIGS. 3 & 4 of the Krymski reference teach the system as claimed.

It is respectfully submitted that the Krymski reference fails to teach or suggest each and every element of the system as claimed. For example, regarding claim 19, the Krymski reference fails to teach or suggest inter alia the following claim limitations: “wherein the sequential readout circuit includes a single amplifier that includes an input for coupling to one column of the array of photocells at a time and an output for generating a voltage value corresponding to a photocell.” Regarding claim 10, the Krymski reference fails to teach or suggest inter alia the following claim limitations: “a single amplifier for reading out the a value of the photocells in the array one photocell at a time.”

First, the elements (e.g., 52 and 54) of the Krymski reference are very different from the sequential readout circuit as claimed. Regarding claims 10 and 19, the readout circuit according to the invention utilizes a single amplifier. This elegant design according to the invention minimizes the number of circuit components. In sharp contrast, element 54 of Krymski includes 2 amplifiers (67 and 68), 6 capacitors (C3 to C6, C9 and C10), 6 transistors (M13, M14, and M15 to M18) for each column (see col. 4, lines 1-3). Moreover, a comparison between FIG. 2 of the current application and FIG. 4 of Krymski illustrates the many differences (e.g., different couplings, signals, components, design, and operation) between the readout circuit as claimed and the Krymski circuit. Consequently, the elements (e.g., element 52 and 54) cited by the Action cannot be used to anticipate the claimed invention since these elements do not function in the same manner nor are they coupled to the same inputs and outputs as the readout circuit as recited in claims 10 and 19.

Furthermore, regarding claim 10, the Krymski reference fails to teach or suggest inter alia the following claim limitations: "a first switch for selectively coupling the amplifier to the first column; and a second switch for selectively coupling the amplifier to the second column." Regarding claim 10, it is respectfully noted that the first and second switches as claimed are coupled to different columns whereas the transistors (e.g., M4, M6, M9, M10) are all coupled to the same column (see col. 2, lines 8-19 and FIG. 4 of Krymski).

The dependent claims incorporate all the limitations of independent claims 10 and 19, respectively. In this regard, the dependent claims also add additional

limitations, thereby making the dependent claims a fortiori and independently patentable over the cited reference. After a review of the cited reference, there does not appear to be any teaching of the specific claims limitations recited by the dependent claims. In this regard, it is respectfully requested that the next Action specifically point out those portions of the cited reference that teach or suggest the specific recited elements in the claimed invention.

Regarding claims 4 and 13, the claimed invention utilizes a single sampling capacitor coupled to a single transistor for handling the sample and hold functions for each column. In sharp contrast, element 52 of Krymski includes 4 capacitors (C1, C2, C7, C8) and 10 transistors (M2, M7, M9, M3, M8, M10, and M4 to M6) for each column (see col. 4, lines 1-3). Consequently, the switches cited by the Action cannot be used to anticipate the claimed invention since the switches do not function in the same manner nor are they coupled to the same inputs and outputs as the first and second switch as claimed in claim 10.

In view of the foregoing, it is respectfully submitted that Krymski reference, whether alone or in combination, fails to teach or suggest the sequential readout circuit as claimed.

REJECTION OF CLAIMS 6, 7, 15 and 16 UNDER 35 U.S.C. 103(a)

Claims 6, 7, 15, and 16 are rejected under 35 U.S.C. 103 for the reasons set forth on page 5 of the Action. Specifically, claims 6, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krymski (US Pat. No. 6,222,175).

The Action states that Krymski does not disclose level shifting circuit or gain manipulation circuit as claimed. However, the Action further states that level shifting and gain manipulation circuits coupled to amplifiers are well known in the art and that it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide such circuits in the apparatus of Krymski to improve dynamic range and improve detection.

The rejections under 35 U.S.C. 103 are respectfully traversed, at least insofar as applied to the new and amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth hereinbelow.

The Action on page 5 proposes a combination the readout circuit design of Krymski with general knowledge that is not supported by a reference. This combination is contested as improper for the reasons advanced below. However, even if this combination were proper, which is not conceded, the resulting combination would still fail to teach or suggest the claimed invention.

THE PROPOSED COMBINATION IS BASED ON IMPERMISSIBLE USE OF THE
CLAIMED INVENTION AS A TEMPLATE TO PIECE TOGETHER THE
TEACHINGS OF THE KRYMSKI REFERENCE AND GENERAL KNOWLEDGE
IN THE ART

The Action states that Krymski teaches the components of the claimed invention. The Action further states that the Krymski reference fails to teach or suggest "a level shifting circuit or a gain manipulation circuit," as claimed. General knowledge of a person of ordinary skill in the art is then cited for teaching all the deficiencies of

the Krymski reference. The Action proposes the combination of Krymski's readout circuit with general knowledge of a level shifting circuit and a gain manipulation circuit utilized with amplifiers.

It is respectfully submitted that the Krymski and general knowledge are improperly combined. It appears that the Action uses improper hindsight to selectively pick pieces from Krymski and pieces of general knowledge to arrive at the claimed invention.

First, it is respectfully submitted that the Krymski reference does not explicitly or implicitly teaches or suggests any motivation to 1) combine the readout design of Krymski with the general knowledge noted by the Examiner.

The Action suggests that the readout circuit of Krymski be modified with the level shifting circuit and gain manipulation circuit as noted previously. However, the Federal Circuit has stated, "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992) [emphasis added].

The Federal Circuit has further held In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992):

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. ... "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art ... would lead that individual to combine the relevant

teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). [emphasis added.]

The Action on page 3 cites, “improve dynamic range and improve detection,” as the motivation to combine the teachings of the Krymski reference with “general knowledge.” Specifically, the portion states, “it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide such circuits in the apparatus of Krymski to improve dynamic range and improve detection.” However, it is respectfully suggested that this quoted portion from the Action is deficient and would not have motivated one of ordinary skill in the art to combine the pieces of information in the manner suggested by the Action.

Even if the use of level shifting and gain manipulation circuits with amplifiers is well-known in the art, which is not conceded, and which as described herein does not appear to be adequately supported by the cited reference, this alone is not sufficient to render obvious the claimed invention since the use of a known circuit in a new and non-obvious manner, for example, as applied to image sensor applications, is patentable.

Consequently, it appears that the current patent application has been improperly used as a basis for the motivation to combine or modify the components selected from Krymski and “general knowledge” to arrive at the claimed invention. Stated differently, the proposed combination of the cited references appear to be based on hindsight since the cited references do not teach or suggest a motivation to combine the respective elements of each reference in the manner proposed by the Action.

The Federal Circuit has held, "It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." This court has previously stated, "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." (quoting *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)), *In re Fritch*, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992). [emphasis added.]

Furthermore, the Federal Circuit has held, "The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself." *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992)

Accordingly, hindsight reconstruction may not be used to pick a component from Krymski and another component from "general knowledge" to arrive at the invention as claimed. Accordingly, it is respectfully requested that the rejection of claims 6, 7, 15 and 16 under 35 U.S.C. 103(a) be withdrawn.

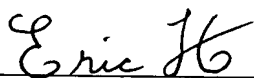
In view of the foregoing, it is respectfully submitted that Krymski reference, whether alone or in combination with general knowledge, fails to teach or suggest the system and sequential readout circuit as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. section 103(a) be withdrawn.

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Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.


Respectfully submitted,



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Eric Ho (RN 39,711)

December 30, 2003
(Date)